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Breaking the deadlock of budgetary autism: what paradigms for future healthcare organisation in Belgium?



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Introduction

At the beginning of the 21st century demographic, scientific and technological evolutions are increasingly putting financial strain on healthcare systems all over Europe, indeed in almost all developed countries. These evolutions are destined to increase as the century progresses, forcing governments, administrators, and healthcare professionals to think anew about the foundations of healthcare organisation. In Belgium, the elementary pillars of our healthcare philosophy – quality combined with accessibility and free choice – are already eroding. A proactive and ambitious reform involving patients, providers, payers, the industries, policymakers, and academics will be needed to prevent further gradual decline(2).

Healthcare reform is not on the cards in Belgium today. The policy emphasis has been and still remains essentially budgetary. Therefore, for a coherent policy approach to be developed, we must identify trends and challenges first. Based on these a suggestion of possible policy options will be made. A pragmatic and realistic approach – we do not have the luxury of ideology or romanticism – can be taken seriously only if the priorities and limits of promising solutions are defined. The purpose of this article is to offer some food for thought on real healthcare policy reform in Belgium, based on the stated necessity of such reform. Our purpose is not to provide a comprehensive or academic analysis, but rather to indicate – with a bird's eye view for the big picture – the unmistakable trends and future challenges that are upon us and to draw the plain conclusions they suggest.



"The objective is to spend approximately $\in 21,5$ billion on healthcare in 2008 and $\in 23$ billion in 2009. Compare this figure with the $\in 850$ million in 1970 and the metaphor with the universe seems straightforward: always expanding and expanding."

1. Major trends in Belgian healthcare provision

1.1. Budgetary explosion combined with budgetary austerity

In healthcare organisation – contrary to perhaps some popular and naïve belief about 'free' and accessible healthcare – everything comes down to numbers. And the numbers are impressive when you take a look at the evolution of the budget for public health care in Belgium. In 1970, public healthcare expenditures were still under the billion euro mark. Ten years later, they accounted for more than \in 3 billion. By the end of the millennium, public health care expenditures had reached \in 12 billion and it is very likely this figure will again be doubled by 2010. In 2005, the public healthcare budget already equalled \in 17 250 358 000, in 2006 \in 17 735 292 000 and in 2007 \in 18 873 404 000. The objective is to spend approximately \in 21,5 billion in 2008(3) and \in 23 billion in 2009. Compare this figure with the \in 850 million in 1970 and the metaphor with the universe seems straightforward: always expanding and expanding. Of course, these are absolute figures. We have seen in over 30 years an average annual growth of close to 5 percent in real terms, i.e. on top of inflation. This is way faster than average economic growth in this country. From the perspective of public budget control, therefore, the growth of healthcare spending is simply unsustainable.

We have nonetheless managed to survive such an expenditure explosion by giving ever increased weight to the relative importance of healthcare in the total social security budget. In 2008, the share of public health care expenditures in the total social security budget will be close to 32%(4). In 1980, it was a mere 22%. It is therefore fair to say that healthcare is gradually cannibalizing social security(5). The victims of this budgetary evolution are the first pillar pensions, the unemployment insurance benefits and child allowances, all of which have seen their relative levels reduced because of increased healthcare expenditure. This situation is untenable in the long run and has already led to a series of healthcare policies that are perhaps necessary or inevitable, but that share a common characteristic in that they restrict the offer of, or access to healthcare in this country.

1.2. Healthcare policy vs. budgetary policy

Given the enormous and ever increasing budgetary importance of healthcare, it is normal and predictable that government should impose a budgetary discipline to avoid deficit spending. This necessary awareness, however, has turned into somewhat of an obsession. Since about a quarter of a century, Belgium's governmental policies in healthcare have indeed been dominated by budgetary concerns, rather than by public health concerns(6). When one looks at the picture from a distance, one can easily come to the conclusion that healthcare policy in Belgium has essentially become budgetary policy. On the one hand, a lot of time and effort is spent on an almost yearly basis in determining growth norms for the public healthcare budget. On the other hand a number of reform measures, although not directly of a budgetary nature, have been developed under the growing pressure of budgetary austerity. In just the past couple of years, we have observed tightened budgets for hospitals and new technology, mergers of hospitals, and the concentration of some medical services in certain hospitals. The doctors and other healthcare providers have seen their therapeutic freedom restricted for the sake of efficiency. The freedom of choice in access to doctors is partially eroding and the doctors have seen the prescription of generic drugs imposed. More bureaucratic rules streamline the medical profession, the inflow of new medicines has been more strictly managed, reimbursed care is increasingly controlled, the inflow of doctors managed, etc.



"Belgium's governmental policies in healthcare have indeed been dominated by budgetary concerns, rather than by public health concerns." What the neutral observer notices, therefore, is a gradual streamlining and soft restriction on healthcare supply, and a gradual streamlining and soft restriction on healthcare demand. Some of these evolutions are highly contentious and debated. Many, indeed perhaps even all, may be necessary or desirable from a pubic governance perspective. But it goes without saying that they all have tradeoffs. Our often trumpeted model of freely available and accessible healthcare in an open market that guarantees competition and choice is gradually eroding. What are widely considered as key components of the Belgian healthcare 'model' are thus begin gradually undermined. We can illustrate this trend by focussing on two key parties: the medical profession and the patients/citizens.

1.3. The medical and paramedical profession under pressure

As almost any practitioner will tell you when questioned upon the state of his/her profession, doctors are facing less therapeutic freedom and more bureaucracy. Moreover, as hospitals have been rationalized, fewer have remained in the non-private sector, thereby decreasing the personal social security of the affiliated medical corps as compared to the previous generation doctors with public servant status. Furthermore, the income growth of the medical profession has diminished in relative size: between 1996 and 2008, the share of the doctors' honoraria in the public budget went from 33,6% to 28,4% - a 5 points decline(7). This trend is further exacerbated by the systematic underfunding of hospitals, which has led hospitals to increase the overhead deducted from the doctors' fees.

The growing pressures on the medical profession and its correspondingly diminished attractiveness should be a source of grave concern. For at the end of the day, the quality of a healthcare system depends on the quality of its human capital. This goes for the medical profession as it goes for the paramedical profession. Human resources will be a key challenge for the future wellbeing of Belgium's healthcare system. If we are to continue to thrive, we need to be able to attract and motivate the requisite human capital at home and, increasingly, abroad as well.

1.4. Private expenditures are on the rise

Although our healthcare expenditures are financed by an ever expanding public budget, the patients themselves have to carry some of the burden. The OECD computed that 27,7% of the total healthcare expenditures in Belgium are paid by the patient-citizen (or his/her employer), either as out of the pocket expenses or through private insurance(8). Only four OECD countries have an even more important share of private expenditure: the US, Canada, Spain and Switzerland (Figure 1).



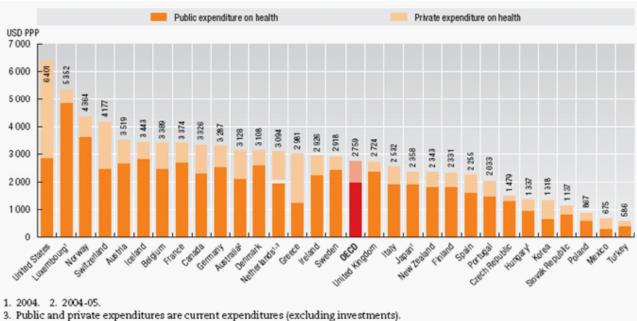


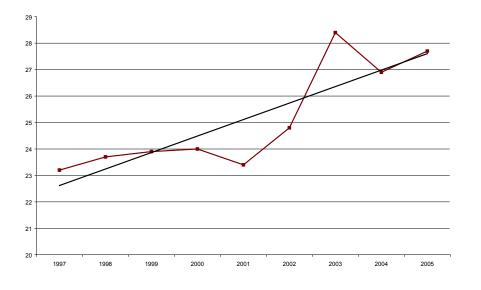
Figure 1: Health expenditure per capita, public and private, 2005

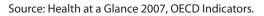
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Source: Health at a Glance 2007, OECD Indicators.

This already considerable share of private expenditures has been growing over the past few years, as can be seen from figure 2 below.

Figure 2: Evolution of the private share of healthcare expenditures in Belgium





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"The growth of private expenditure signals the evolution of our economy towards a health economy. But it also underinability for public sector funding to match private healthcare demand."

What is more, the share of private expenditure is likely to continue to increase in the years to come. Of course, this in itself is not necessarily a problem. Research learns that, while the marginal utility of consumption goods decreases rapidly with the number of purchases, this is not true for healthcare expenditures. In fact, "as people get richer and consumption rises, the marginal utility of consumption falls rapidly. Spending on health to extend life allows individuals to purchase additional periods of utility. The marginal utility of life extension does not decline"(9). In other words, people are willing to pay for healthcare and for a whole bunch of health related goods and services, simply because they value them. This is one of the reasons why an increasing number of people are willing to pay for private health insurance. scores the growing According to the European insurance and reinsurance federation, the amount of privately insured individuals in Belgium has almost doubled in ten years: from 2 667 thousand in 1996 to 4 913 thousand in 2006(10).

> The growth of private expenditure signals the evolution of our economy towards a health economy. This is in itself a good and desirable thing and heralds the next phase in our economic development. On the other hand, however, and this is where our reflection kicks in, the growing share of private expenditure underscores the growing inability for public sector funding to match private healthcare demand. It underscores that the 'one size fits all' approach to healthcare provision fits less and less. As we shall see, this trend is not going to disappear and therefore the policy debate should confront fully and squarely the question of choice and limits in public funding. The alternative is a continued slow erosion of publicly funded healthcare, with an American style proliferation of private insurance in a chaotic market context on the side. All this will be to the detriment of the poorest and sickest and is therefore not an attractive perspective and, we venture to claim, not a perspective the public would support if fully informed of the choice we face.

> 2. The budgetary challenge: how the problem can become (part of) the solution

> Healthcare's place in society will be increasingly predominant in the 21st century, not only because of well-known demographic developments, but also because of socio-economic, scientific and technological changes. The key challenge will increasingly be to provide healthcare that is both affordable and accessible, while being of high quality. The trends highlighted in the previous paragraph are therefore worrying. If we do not succeed in reversing them, these trends risk becoming real and structural weaknesses as the following decades unfold.

2.1. The challenge of ageing

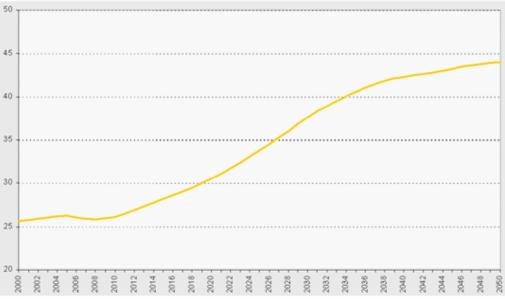
"In almost every country, the proportion of people aged over 60 years is growing faster than any other age group, as a result of both longer life expectancy and declining fertility rates. This population ageing can be seen as a success story for public health policies and for socioeconomic development, but it also challenges society to adapt, in order to maximize the health and functional capacity of older people as well as their social participation and security"(11). As we progress through the 21st century, global ageing will put increased economic and social demands on many countries. Belgium is no exception to that. As can be seen from figure 3 below, the dependency ratio of the elder compared to the population at working age is about to double in 50 years. In 2050 there will be 2.27 people at working age, for 1 elder (65+), which is about half of the ratio at the end of the 20th century.



to provide healthsible, while being of high quality."

"The key challenge The dramatic decline in the number of (potentially) economically active people as compared will increasingly be to the number of (potentially) economically inactive is of major concern in countries where - as in Belgium – social security (including healthcare) is financed through the so called 'repartition' system. In such a system, the social security expenses for the old and the sick are care that is both af- paid for by the current working generation, who themselves hope that the following generation fordable and acces-will do them the same favour in the future. However, with ageing and the retirement of the Baby Boomers the equilibrium between succeeding generations disappears and our society is consequently faced with a real budgetary challenge which will be inevitable. Needless to say this is going to put a tremendous pressure on our social security system and thus on the taxpayers' contributions.

> Figure 3: Dependency ratio of the elder (ratio of the population of 65 years or older on the population at working age)



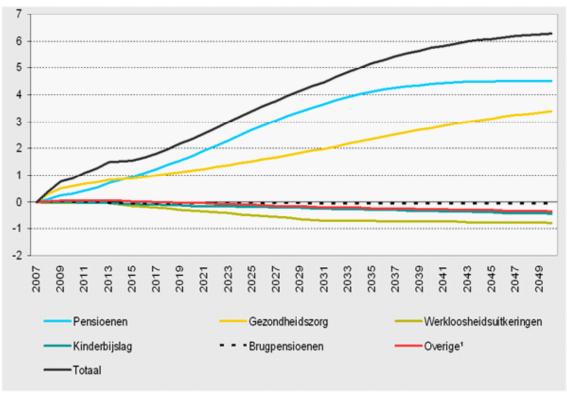
Source: National Bank of Belgium (11)

Moreover, the ageing of the population as such is also estimated to increase healthcare expenses by 3 percentage points by 2049, as can be seen from figure 4 below. Roughly, this represents €10 billion more expenses. This rise in expenditure comes on top of the dramatic doubling of the dependency ratio. Less and less younger workers will have to finance ever more healthcare expenses for ever more older retirees.



Figure 4: The budgetary cost of ageing (percentage points change of GNP, compared to 2007)

"Less and less younger workers will have to finance ever more healthcare expenses for ever more older retirees."



Source: National Bank of Belgium (12)

2.2. More health and the rise of the health economy

For Belgium, it is estimated that the phenomenon of ageing by itself will 'only' increase healthcare expenses by 0,7% on an annual basis(13). The expected larger share of healthcare in our economy can therefore not be explained by demographic factors alone. Ageing is just the tip of the iceberg of growing health and healthcare expenditure. It is widely acknowledged that several drivers will be responsible for an inexorable push in healthcare expenditures in the decades to come, besides demographics(14):

- Changing lifestyles and the consequent explosion of lifestyle diseases, e.g. related to obesity.

- Continued increased specialisation in the medical profession, as the scientific evolution creates ever more avenues and branches.

- Innovation in technology and medicines, opening up new treatments and narrowing down the target group to eventually the level of individual and genetic treatment, where the cost saving effects of blockbuster treatments with huge markets will disappear. The treatments will continue to improve, but their relative cost will rise.

- Consumerism, as people become ever more demanding and willing to improve their health and wellbeing, further blurring the line between medicine and consumption.

- Greater wealth in both the western world and the now rapidly expanding developed world, feeding further the desire and willingness to pay for health and healthcare.



"Our economy is health economy, a new stage in economic progress *in post-industrial* societies."

The link between 'wealth' and 'health' in the shape of healthcare expenditures is borne out evolving towards a by economic research, also in Belgium. The Federal Plan Bureau found that the 'elasticity' of health expenses per capita and GDP per capita – this is the extent to which health expenditure reacts to increased economic growth - is superior to one(15). This means two things: (1) the wealthier people become, the more they are willing to spend on healthcare, and (2) people are prepared to spend proportionally more on health compared to the extra wealth they have acquired. The relationship between GDP per capita and health expenditures is also illustrated in figure 5 below: the "wealthier" a country, the "healthier" a country.

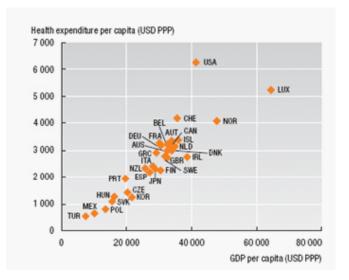


Figure 5: Health expenses per capita and GDP per capita, 2005

Source: Health at a Glance 2007, OECD

All of this indicates that the citizen-patient is consciously choosing for health. Citizens are no longer mere patients who swallow whatever the doctor prescribes. They are becoming more and more conscious healthcare buyers and consumers, further stimulated by increased access to healthcare information via a variety of sources, including the internet. According to some long term estimates, up to one third of a developed country's GDP will thus be spent on healthcare by the end of our century(16). This signals the evolution of our economy towards a health economy, a new stage in economic progress in post-industrial societies.

Economically speaking, it makes no sense to deprive people from something that creates value for them. The bottom line is: rather than being satisfied with the landscape as we know it now, which is characterized by ever more rationing, more trade-offs and more multi-speed medicine under an ever tighter public budget, we should allow ourselves to invest more and more consciously in healthcare. We should put our traditional budgetary autism aside and start grasping the economic opportunities that arise from the shift to a health economy. In this perspective, the growing private expenditure on healthcare is not so much the problem as it is part of the solution. For that to be the case, however, the necessary but narrow focus on budgetary control in public sector funding needs to be lifted and an open debate on the limits and choices in public healthcare provision must be recognized as both inevitable and desirable.

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"The 'Brussels 3. The necessary quest for paradigms for future healthcare organisation new consensus' seeks in Belgium

to reduce the annual growth rate of public expenditure on healthcare to 3% per year, *i.e. a baffling* reduction of almost 40% as average growth 2005). in the previous timate is simply unbelievable."

3.1. Moving beyond the "Brussels' consensus"

To anticipate the budgetary impact of ageing and to discipline governments in the short run for this long term challenge, Belgium has established a virtual savings strategy (the Silver Fund) and an annual rite of future ageing cost estimation, in the shape of reports from the High Council of Finance's Commission on Ageing. The purpose of these reports is to estimate – and the estimates have never ceased to increase with each annual report - the expected future cost of demographic ageing, based on a number of parameters of future fiscal, social, and economic performance.

These parameters can be summed up as follows below. We contrast the premise with the past/ current performance:

compared to the _1,75% labour productivity growth per year till 2030 (average 1,45% between 1980-

-Total unemployment rate of 8% in 2030 (12,6% in 2007).

35 years. This es- -Activity rate of 70% in 2030 (62% in 2008, or a difference of roughly 500.000 jobs).

-Average annual economic growth 2,2% till 2030 (1,8% between 1990-2005).

-State debt 60% GDP in 2014 (81,4% in 2008).

-Annual average real term growth of public health care budget restricted to 3% till 2030 (near 5% between 1970-2006).

As the list shows, the estimates assume a systematic and marked improvement of Belgium's fiscal, social, and economic performance. We have argued elsewhere that such an improvement is very unlikely and in fact amounts to wishful thinking without prior fundamental policy reform(17). Indeed, ceteris paribus, population ageing is likely to impede and slow economic performance, not improve it(18). The High Council of Finance itself recognizes the limits of a purely budgetary strategy and advocates reforms that stimulate growth and employment in order to meet the financial challenge of ageing(19).

More importantly for our exercise is the last of the aforementioned premises, which seeks to reduce the annual growth rate of public expenditure on healthcare to 3% per year, i.e. a baffling reduction of almost 40% as compared to the average growth in the previous 35 years. Given the powerful vectors that will increase rather than decrease healthcare needs in the future, as listed above, this estimate is simply unbelievable. In the absence of fundamental reform in both healthcare organisation and in healthcare financing it can only mean a growing 'sovietisation' of Belgian healthcare for the general public, with an increasingly important private market for the fortunate. This is a proposition too undesirable even to entertain.

Given these stark realities, the Belgian healthcare system – both in its organisation and in its financing – has no option but to reform and improve. Without such reforms we will simply not be able to maintain anything near the quality and accessibility we now enjoy. This article is not the place for developing a comprehensive and balanced list of fundamental proposals. We will, however, indicate some directions with potential, in the hope of broadening mindsets and starting a pragmatic debate on the paradigms of future healthcare organisation in this country.



"ICT should be and will be central to the future of Belgian healthcare organisation, much more so than it is today and than current government programmes envisage."

3.2. The promise of ICT

Information and communication technologies (ICT) have already had a significant impact on economic growth, but also on healthcare and the delivery of health services in a number of countries. From telemedicine to electronic health records to RFID to embedded sensors, a variety of health ICTs have been shown to improve operational and administrative efficiencies, clinical outcomes, documentation and information flow in a variety of global settings. Chaudhry et al. (2006)(22) have scrutinized 257 empirical studies to analyze the impact of health information technology on quality, efficiency and costs of medical care. The analyzed studies unanimously reported positive results on the quality of care through an increasing adherence to guideline- or protocol-based care, clinical monitoring based on large-scale screening and aggregation, transparency, and the reduction of medical errors. ICT was also found to improve healthcare's efficiency thanks to more accurate diagnosis and thus less unnecessary treatments and medication consumption. One examined study reported efficiency gains up to no less than 24%. Chaudry et al. were not able to find relevant studies - they were either too old or methodologically guestionable – that showed ICT to be cost reducing in healthcare. Hillestad et al. (2005)(23), on the other hand, computed a cautious estimate - not a proof - of how much money could be saved in the US thanks to the generalised application of the electronic health record(24). The estimation yielded an impressive figure of \$513 billion by 2020.

What the above demonstrates and illustrates is the potential of information and communication technology to improve the organisation of healthcare, to improve the delivery of health care services, to improve health outcomes and to rationalize healthcare spending without restricting the supply of healthcare services. In view of the current pressures and future challenges facing the Belgian healthcare system, it is clear that these benefits represent both an opportunity and a necessity. ICT should be and will be central to the future of Belgian healthcare organisation, much more so than it is today and than current government programmes envisage.

3.3. Horizontal v. vertical integration of healthcare services

The Belgian healthcare system is essentially vertically integrated. From the top down, the government decide on budgets, the RIZIV/INAMI allocates budgets, the mutual funds (or private insurers) assure reimbursement, the hospitals organize and centralize care, the specialists provide specialist care, and the general practitioners provide general care. This slicing up of the healthcare cake induces turf wars and causes mutual isolation between different levels in healthcare provision. From the perspective of health outcomes this is a suboptimal situation, especially since a large percentage of healthcare expenditures is linked to a limited group of pathologies. It would be more logical, and indeed more productive, to adopt a horizontal approach where the main pathologies would be targeted in a succession of stages: from information and sensitisation (prevention), to screening, early diagnosis, and eventually team treatment with various health care professionals involved in the particular disease on a platform basis. Health care providers, with the right government support and structure, could thus work more closely together to improve the coordination and access to health, and to ensure better health outcomes. Today's parcelled out approach could thus make room for a continuum of care which integrates the whole healthcare chain.



According to the World Health Organization, the continuum of care offers a complete service array, from hospital to home care, and requires all medical and social services within the community to be brought together. The connection of all healthcare initiatives on all levels of the healthcare system is also part of the continuum of care. The patient therefore stands in the centre of the health supply chain. For every patient and for every type of pathology, the most adequate and available treatment is suggested. Not the profitability for anyone level or actor, but the patient's needs are the most important selection criterion when treatment is offered. Obviously, this implies more coordination and integration between the different healthcare levels and healthcare services.

The distinction between a 'vertical' and a 'horizontal' approach to healthcare is not sacrosanct. There are, for instance, certainly issues of organisational complexity in framing a horizontal, disease and patient oriented approach. But what the above illustrates is the need for the Belgian healthcare organisation to reconsider both the individual role of the respective levels or actors in healthcare organisation and the way they collaborate for ensuring optimal health outcomes with improved efficiency. Is the division between GPs and specialists useful? What roles do mutual funds have to assume going forward? Should not the patient or the disease be central to the process, rather than the institutional structure of health care? The current vertical division of healthcare organisation does not easily allow such reconsiderations, but on the expense of efficiency or health outcome. We need the freedom to reconsider the relevance and purpose of the current institutional actors in the healthcare system if we are to preserve its healthcare performance for the future.

3.4. Towards a real debate on a multiple pillar structure in healthcare?

We have seen that:

-While even today a large percentage of Belgian healthcare expenditure is already private;

-Public healthcare expenditure in the future will increasingly suffer from the gulf between what is required and what is affordable, as the Belgian repartition system meets the combined challenge of ageing and the exponential growth of healthcare demand.

This sober reality should force us to recognize what is already a reality today and what will increasingly become a necessity tomorrow, i.e. that healthcare funding is both a public and a private affair. The solid policy approach is not to deny this combination but to confront it and have a societal debate about the combination and organisation of both. The policy of denial, which is often practiced today, offers no respite but instead allows private funding to develop organically in an unregulated market. This results in limited transparency, unlimited price increases, and a real two-speed society between those who can and those who cannot afford private insurance of some kind. If you are looking for the USA, do not look any further.

The very sensitive debate about the limits of public health care provision needs to be brought into the open. It is currently hidden behind the closed doors of administration and a mass of ad hoc decisions on public funding. It will, of course, be a very difficult and sensitive debate. The limits of public health care provision will have to be determined, not on ad hoc basis but on a fundamental and principled societal basis. The role and responsibility of various actors will have to be (re-)defined, since we would have to organize additional pillars of health care funding by recalibrating the responsibilities of citizens, employers, insurers and mutual funds. In the same vein, patient responsibility would have to be constructed and organized, implying a variety of ethical questions on the limits of solidarity and the scope of personal responsibility.



"Multiple pillars of healthcare financing will *be inevitable* **Belgium** wants to maintain, not only a high level healthcare system but also a fair and just healthcare system."

The debate will thus undoubtedly be difficult, but at the same time cathartic. It will allow us to rationalize and democratize the vagaries of currently ad hoc budgetary decisions. It will allow us to streamline and organize a market for private insurance, ensuring due attention to coverage of the poor and the ill. It will allow us to set ethical rules of personal conduct and responsibility, making the residual solidarity fairer and more defensible. And, as emphasized and necessary if above, it will allow us to liberate the funds necessary for our inexorable and fortunate evolution towards a healthcare economy. The alternative is political meandering, ethical distortion, and budgetary scarcity. Multiple pillars of healthcare financing will be inevitable and necessary if Belgium wants to maintain, not only a high level healthcare system but also a fair and just healthcare system.

Conclusion

The traditional public rhetoric leads Belgians to believe that theirs is one of the best healthcare systems in the world. The accolade may or may not be true. What is certainly false, however, is the common political conclusion that the only debate should be about how much public money is poured into the system. This political mantra, which has dominated Belgian healthcare policy for the past quarter of a century, is untenable if we are to successfully confront the twin challenges of ageing and increased healthcare demand in the 21st century. These challenges will be inevitably upon us for the coming decades. How can we meet them while maintaining the real fortes of the Belgian healthcare system, i.e. quality and accessibility?

This short paper argues that we will certainly not meet the impending challenges if we follow the wholly unrealistic 'Brussels Consensus' on the impact of ageing. We will find ourselves in a very uncomfortable dead-end street if we do not succeed in adopting reform policies that improve both health care funding and its performance. The foundations of the Belgian healthcare model – quality combined with accessibility and choice – are already gradually eroding. Only by considering new avenues for its organisation and financing will we be able to sustain for future generations the type of healthcare performance we enjoy today.

We suggest three lines of thinking: increasing investments in ICT, improving coordination and integration between the stakeholders of the healthcare system, and a real debate on a multi-pillar structure for the financing of healthcare. These are nothing more than openings for debate. The question is whether the political and institutional healthcare community in this country, which is so mobilized by the day-to-day constraints and challenges, will be able to entertain creative and fundamental thinking in time. A healthcare system is like the proverbial tanker which turns ever so slowly but which consequently is equally hard to correct once it has turned. Let us hope, for all our sakes, that the Belgian actors will turn in time.



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(20) The interested reader can find food for thought on these in F. Daue and D. Crainich, Hoe gezond is de Belgische gezondheidszorg, note 3 above.

(21) Radio Frequency Identification, is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders.

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(24) An electronic health record (EHR) refers to an individual patient's medical record in digital format. Electronic health record systems co-ordinate the storage and retrieval of individual records with the aid of computers.